

in its downward position[.] and for placing the materials in direct contact with the upper surface of the heating stage when the heating stage is located in the upward position.

6. (Twice Amended) A laminating apparatus for laminating materials comprising:

- (a) at least one laminating section, each of the at least one laminating section comprising an upper chamber and an under chamber wherein the upper and under chambers are divided by a diaphragm means;
- (b) a heating stage located in the under chamber for heating the materials put on the heating stage; and
- (c) a moving means for moving the materials between an upward position where the materials are supported above and apart from the upper surface of the heating stage and a processing position where the materials are [put on] placed in direct contact with the upper surface of the heating stage.

#### **REMARKS**

Claims 1 and 6 have been amended and claims 12 - 14 have been canceled without prejudice. No new matter has been added by those amendments.

In the September 11, 1997 Office Action the Examiner entered an election/restriction requirement and objected to claims 1 - 3, 5 - 7, and 9 - 11 under 35 U.S.C. § 103(a). Claims 12 - 14 have been canceled without prejudice and claims 1 and 6 have been amended. Accordingly, reconsideration of the rejections of claim 1 - 3, 5 - 7 and 9 - 11, in view of the aforesaid amendments and the following remarks is respectfully requested.

Applicant's attorney wants to take this opportunity to express his appreciation to Examiner Restino for the courtesies extended during the telephone interview between Applicant's attorney and Examiner Restino on December 9, 1997. Although no agreement was reached as to the patentability of the claims, Examiner Restino indicated his belief that the claims as amended were patentable over the cited prior art.

## I. RESTRICTION/ELECTION

The Examiner withdrew claims 12-14 from consideration as being directed to a non-elected invention. Although Applicants traverse the election/restriction requirement, Applicants have canceled claims 12-14.

## II. REJECTED CLAIMS

### A. *Response to Paragraph 3*

The Examiner rejected claims 1, 5 - 6 and 9 - 11 under 35 U.S.C. § 103(a) as being unpatentable over the admitted state of the prior art in view of Hinterseer and Garabedian. Applicants respectfully request reconsideration of this rejection.

The invention claimed in claim 1 is directed to a two chamber laminating apparatus. The invention includes a supporting means for supporting the materials. The invention also includes a separate and distinct movable heating stage. When the heating stage is in its downward position, the supporting means supports the materials above and apart from the heating stage. When the heating stage is in its upward position, the materials to be laminated is placed in direct contact with the upper surface of the heating stage.

This novel and nonobvious invention provides several advantages. First, because the material to be laminated can be supported above the heating stage, the material to be laminated does not have to be brought into contact with the heating stage until the heating stage is at the proper temperature. Prior art systems without a separate heating stage and supporting means can not accomplish this function because of the need to create a vacuum prior to heating the material to be laminated. Thus, under prior art systems, the material must be placed on a heater, a vacuum created and then the heater heated to the proper temperature. Therefore, the claimed invention allows for a superior lamination. Full use of this advantage requires the materials to be laminated to be placed in direct contact with the heating stage. Second, because the heating stage can be lowered away from the material, the laminated material can be removed without cooling the heating stage. This allows for a reduction in costs because a cooled heating stage would have to be reheated prior to its reuse on a second material to be laminated. Again, full use of this advantage requires that the material to be laminated be placed directly on the heating stage.

The admitted prior art does disclose element (a) of Claim 1. However, as admitted by the Examiner in the Office Action mailed December 2, 1996 (Paper No. 8), "[t]he admitted state of the prior art teaches that these apparatuses do not have the capability of controlling the amount of heat applied by the heating stage (e.g. by movement of the heating stage and/or the laminae) prior to vacuum withdrawal resulting in entrapment of air between the laminae." Page 6. Thus, the admitted prior art neither shows nor suggests the claimed heating stage nor the claimed supporting means. Nor are those features taught by the other cited prior art.

The Garabedian patent fails to disclose those claimed features. The Examiner appears to rely on Figures 1 and 2, which show the material to be laminated in a suspended position. However, in Garabedian Figures 1 and 2 there is no equivalent of the supporting means of the claimed invention. In addition, Garabedian's patent does not state that the heating stage can ascend and descend freely. Garabedian's Figures 1 and 2 show sheets 10 and 11 separated from each other as well as separated and at a distance above sheet 7. It is inconceivable that when performing actual lamination, the sheets 7, 10, and 11 are separated in this manner between pressing member P1 and pressing member P2 (or supporting members S1 and S2 in Figure 2). Garabedian's Figures 1 and 2 merely illustrate the sheets 7, 10 and 11 floating between members P1/S1 and P2/S2 simply to facilitate the explanation. See also Col. 2, line 63 - Col.3, line 5 (indicating that Figures 1 and 2 are merely schematic drawings). These sheets are, in fact, positioned on top of one another in contact, to be placed directly on the diaphragm 5. Because the materials are placed on diaphragm 5, the materials are not placed in direct contact with the heating stage as required by the amended claims. Thus, contrary to the Examiner's assertion, Garabedian neither shows nor suggests the claimed supporting means and movable heating stage.

In paragraph 6 of the Office Action, the Examiner indicated that Applicants arguments concerning Garabedian are not persuasive. According to the Examiner:

Garabedian shows that the heating member is capable of being moved with respect to the work supporting means (4,5,P1,P2). Although Garabedian fails to teach the particular **methodology** recited in the claims of moving the heating plate with respect to the support members so that the work is supported above

and apart from the upper surface of the heating member when the heating member is located in its downward position is irrelevant to the claims **apparatus** as long as the prior art apparatus is capable of performing this method. It is the examiner's position that the movable heating means in the Garabedian apparatus is capable of performing applicant's claims method.

The Applicants respectfully disagree with the Examiner's comments. All of the claims now pending in the instant application are apparatus claims, not method claims. Thus, in order to render the invention obvious, the prior art must have all of the structure of the elements of the claim. As discussed above, Garabedian lacks the structure claimed in the invention.

Additionally, Hinterseer when taken either alone or in combination with the other prior art fails to show or suggest the claimed invention. The device disclosed in Hinterseer uses a movable pressure plate 16' to move a device to be welded. However, pressure plate 16' neither anticipates nor renders obvious the claimed moving means. Unlike the moving means claimed in claim 6--which requires the material to be laminated to be placed on the upper surface of the of the heating stage when the moving means is in a processing position--pressure plate 16' of Hinterseer prevents the material to be welded from ever being placed on the upper surface of heater rod 6 or even countertool 5.

The Examiner indicated in paragraph 6 of the Office Action that the "Applicant's comments with respect to Hinterseer . . . are not commensurate in scope with the claims as they do not require the material to be in contact with the heating state." Applicants respectfully disagree and believe that the then pending claims required direct

contact with the heating state. Regardless, Applicants have amended the claims to more clearly state that requirement.

Because neither the admitted prior art, Garabedian, nor Hinterseer, whether taken alone or in combination, show or suggest the invention of claim 1, claim 1 is patentable. Similarly because claims 5 and 10 depend from claim 1, they are likewise patentable.

Claim 6 (and dependent claims 9 and 11) have also been rejected over the same prior art. Unlike claim 1, which requires a movable heating stage, claim 6 requires a moving means for moving the materials between an upward position and a processing position. The heating stage may be either stationary or movable. Despite those differences, for the same reasons as discussed above for claim 1, claims 6, 9, and 11 are patentable.

Reconsideration of the rejection is respectfully requested.

*B. Response to Paragraph 4*

The Examiner rejected claim 2 under 35 U.S.C. § 103(a) as being unpatentable over the admitted prior art in view of Hinterseer and Garabedian and in further view of Vogt.

As discussed above, claim 1, and its dependent claim 2, are patentable over the admitted prior art in view of Hinterseer and Garabedian. Vogt, whether taken alone or in combination with the admitted prior art in view of Hinterseer and Garabedian, fails to show or suggest the elements of claim 1 missing from the admitted prior art in view of Hinterseer and Garabedian nor the additional limitation require by claim 2.

Vogt is direct to a conventional single chamber laminator which fails to disclose a claimed feature of the invention, a supporting means for supporting the laminate and a separate and movable heating stage. Instead, the device disclosed in Vogt uses its supporting webs 22a and 22b to support not the material to be laminated, but, *inter alia*, a supporting plate, heating film, and a pressure plate. Col. 7, line 61 - Col. 8, line 7.

Moreover, Vogt fails to disclose the specific heating stage and supporting means as disclosed in amended claim 2. Amended claim 2 requires the heating stage to have at least one hole and the supporting means to be supporting rods placed through the hole and protruding from the hole when the heating stage is in its downward position. To the contrary, the supporting webs 22a and 22b disclosed in Vogt do not protrude from the upper surface of the heating stage but support the heating stage. Accordingly, the admitted prior art in view of Hinterseer and Garabedian, in further view of Vogt, fails to render the claimed invention obvious.

Reconsideration of the rejection is respectfully requested.

C. *Response to Paragraph 5*

The Examiner rejected claims 3 and 7 under 35 U.S.C. § 103(a) as being unpatentable over the admitted prior art in view of Hinterseer and Garabedian in further view of Miyashita.

As discussed above, claim 1, and its dependent claim 3, are patentable over the admitted prior art in view of Hinterseer and Garabedian. Miyashita, whether taken alone or in combination with the admitted prior art in view of Hinterseer and Garabedian, fails to show or suggest the elements of claim 1 missing from the admitted prior art in view of Hinterseer and Garabedian nor the additional limitation required by claim 3.

Miyashita is directed to a hot press. Like the admitted prior art in view of Hinterseer and Garabedian, Miyashita does not disclose or suggest a supporting means which maintains the material above the heating stage when the heating stage is in its downward position. Because none of the references, show or suggest "a supporting means for supporting the materials in a position above and apart from the upper surface of the heating stage when the heating stage is located in the downwards position and for placing the materials in direct contact with the upper surface of the heating stage when the heating stage is located in the upward position," claim 1 and dependent claim 3 are patentable. Nor does Miyashita disclose the claimed heating stage and moving means of claim 6. Therefore, for the same reasons discussed above, claim 7 is likewise patentable.

Reconsideration of the rejection is respectfully requested.

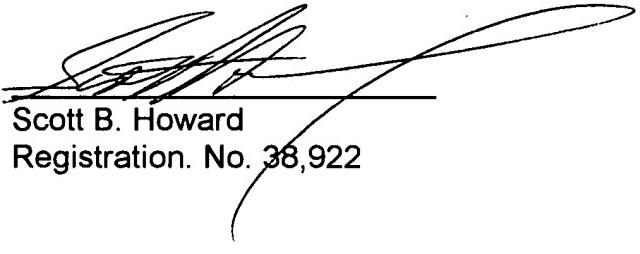
### **III. CONCLUSION**

Applicants wish to thank the Examiner in advance for his time in considering this Amendment. If the Examiner believes that an interview would be helpful in resolving any issues, the Examiner is kindly requested to contact the undersigned attorney at (212)336-2451.

For the foregoing reasons, Applicants believe the present application is in condition for allowance and such action is respectfully requested.

Respectfully submitted,

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